

Notice of Allowability

Application No.

10/826,970

Examiner

Elisa M. Rice

Applicant(s)

REED ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment filed on 9/19/2007 and telephonic interview held on 10/26/2007.
2. ☒ The allowed claim(s) is/are 1-16.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>20071026</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Joel Meyer on 10/26/2007.

2. The application has been amended as follows:

Claim 1 has been replaced by the following:

--1. A method of digitally watermarking visual media comprising:

passing a reference image and a watermarked image through a model of an output device to produce a modeled reference image and a modeled watermarked image, the reference image comprising a version of the watermarked image prior to being watermarked to form the watermarked image;

passing the modeled reference image and the modeled watermarked image to a visual quality metric that computes a measure of visual quality of the modeled watermarked image based on a visual quality analysis of the modeled watermarked image relative to the modeled reference image; and

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using the output of the quality metric to adjust watermark embedding to achieve a desired visual quality in a watermarked image.--

Claim 7 has been replaced by the following:

--7. A computer readable storage medium on which is stored instructions for performing a method of digitally watermarking visual media, the method comprising:

passing a reference image and a watermarked image through a model of an output device to produce a modeled reference image and a modeled watermarked image, the reference image comprising a version of the watermarked image prior to being watermarked to form the watermarked image;

passing the modeled reference image and the modeled watermarked image to a visual quality metric that computes a measure of visual quality of the modeled watermarked image based on a visual quality analysis of the modeled watermarked image relative to the modeled reference image; and

using the output of the quality metric to adjust watermark embedding to achieve a desired visual quality in a watermarked image.--

Claim 8 has been replaced by the following:

--8. A method of digitally watermarking a signal comprising:

passing a reference signal and a watermarked signal through a model of an output device to produce a modeled reference signal and a modeled watermarked signal, the reference signal comprising a version of the watermarked signal prior to being watermarked to form the watermarked signal;

passing the modeled reference signal and the modeled watermarked signal to a perceptual quality metric that computes a measure of perceptual quality of the modeled watermarked signal based on a perceptual quality analysis of the modeled watermarked signal relative to the modeled reference signal; and

using the output of the quality metric to adjust watermark embedding to achieve a desired perceptual quality in a watermarked signal.--

Claim 16 has been replaced by the following:

--16. A computer readable storage medium on which is stored instructions for performing a method of digitally watermarking a signal, the method comprising:

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passing a reference signal and a watermarked signal through a model of an output device to produce a modeled reference signal and a modeled watermarked signal, the reference signal comprising a version of the watermarked signal prior to being watermarked to form the watermarked signal;

passing the modeled reference signal and the modeled watermarked signal to a perceptual quality metric that computes a measure of perceptual quality of the modeled watermarked signal based on a perceptual quality analysis of the modeled watermarked signal relative to the modeled reference signal; and

using the output of the quality metric to adjust watermark embedding to achieve a desired perceptual quality in a watermarked signal.--

3. Claims 1-16 are allowed.

4. The following is the Examiner's statement of reason for allowance:

The claimed invention is allowed because passing both a reference and a watermarked image or signal through a model of an output device followed by passing both the modeled reference and modeled watermarked image or signal through a visual quality or perceptual quality metric to compute a measure of the visual quality or perceptual

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quality for iteratively adjusting a watermark embedding is not taught in the prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elisa M. Rice whose telephone number is (571)270-1582. The examiner can normally be reached on 8:00a.m.-5:30p.m. EST Monday thru Friday.

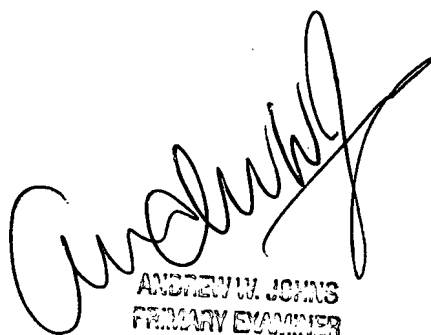
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian P. Werner can be reached on (571)272-7401. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Elisa Rice *ER 10/29/2007*
Patent Examiner
2624

EMR


ANDREW W. JOHNS
PRIMARY EXAMINER